

## **AMENDMENT TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **LISTING OF CLAIMS:**

1. (Currently Amended) Luminescent nanoparticles comprising:

(a) a core comprising a luminescent metal salt selected from phosphates, sulfates or fluorides; and

(b) a shell surrounding the core, wherein the shell comprises a metal salt capable of preventing or reducing energy transfer from the core to the surface of the nanoparticle, after electronic excitation of the core, and

wherein

(i) said metal salt comprised by the shell is non-luminescent, or

(ii) the respective energetic distances between the electronic ground state and the first excited state of said luminescent metal salt comprised by the core and said metal salt comprised by the shell do not allow the transfer of the excitation energy from the excited core to the shell.

2. (Previously Presented) Luminescent nanoparticles according to claim 1, wherein the luminescent metal salt of the core and the metal salt of the shell are both selected from phosphates, sulfates or fluorides.

3. (Previously Presented) Luminescent nanoparticles according to claim 1 having an average diameter based on their longest axis of less than 30 nm.

4. (Previously Presented) Luminescent nanoparticles according to claim 1, wherein the average thickness of the shell does not exceed the average diameter of the core.
5. (Previously Presented) Luminescent nanoparticles according to claim 1 wherein the core comprises a doped luminescent metal sulfate, phosphate or fluoride and the shell consists of a non-luminescent metal salt.
6. (Currently Amended) Luminescent nanoparticles according to claim 5, wherein the core comprises a doped host metal sulfate, phosphate or fluoride, wherein the host metal is selected from alkaline earth metals, Sc, Y, La, Al, Ga, In or Tl, or Zn, and the dopant is at least one lanthanide metal selected from Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, or Yb, or a transition metal selected from Cr and Mn.
7. (Previously Presented) Luminescent nanoparticles according to claim 5, wherein the core comprises a doped host metal sulfate, phosphate or fluoride, wherein the host metal and the dopant are selected from Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, or Yb.
8. (Original) Luminescent nanoparticles according to claim 7 wherein the core consists of  $\text{CePO}_4\text{:Tb}$  or  $\text{CePO}_4\text{:Nd}$  and the shell of  $\text{LaPO}_4$ .
9. (Previously Presented) Luminescent nanoparticles according to claim 1 wherein the core consists of a luminescent lanthanide sulfate, phosphate or fluoride and the shell consists of a

lanthanide salt different from the core material and preventing or reducing energy transfer from the core to the surface of the nanoparticle, after electronic excitation of the core.

10. (Previously Presented) Luminescent nanoparticles according to claim 9 wherein the core consists of a Nd sulfate, phosphate or fluoride, and the shell consists of a Gd salt.

11. (Previously Presented) A process for the preparation of luminescent nanoparticles comprising:

preparing a first mixture comprising luminescent metal sulfate, phosphate or fluoride nanoparticle cores in an organic medium; and

reacting said first mixture, an anion source for the shell to be formed and a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions at a temperature of 50 to 350 °C until a shell has formed around said luminescent nanoparticle cores.

12. (Previously Presented) The process according to claim 11, wherein said reacting comprises:

heating said first mixture to a temperature of 50 to 350 °C, and

adding to this first mixture at this temperature, dropwise and separately, an anion source for the shell to be formed and a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions, until a shell has formed around said luminescent nanoparticle cores.

13. (Previously Presented) The process according to claim 11, wherein said reacting comprises:

adding an anion source to said first mixture

heating the resulting mixture to a temperature of 50 to 350 °C,

adding thereto a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions at this temperature until a shell has formed around said luminescent nanoparticle cores.

14. (Previously Presented) The process according to claim 11 wherein said reacting comprises:

combining said first mixture, an anion source for the shell to be formed and a second mixture comprising shell-forming metal ions and an organic complexing agent for said metal ions, and

heating the resulting mixture to a temperature of 50 to 350 °C until a shell has formed around said luminescent nanoparticle cores.

15. (Previously Presented) The process according to claim 11, wherein the organic medium present in the first mixture and the organic complexing agent present in the second mixture are identical.

16. (Previously Presented) The process according to claim 11, wherein the organic medium and the complexing agent are selected from mono-or dialkyl amines wherein the alkyl residues have from 4 to 20 carbon atoms, phosphororganic compounds, polyols and sulfoxides.

17. (Previously Presented) The process according to claim 11, comprising the steps of synthesizing the nanoparticle cores in said organic medium followed by reacting these cores without prior isolation.

18. (Previously Presented) The process according to claim 11, wherein the anion source is used in excess molar amounts based on the stoichiometrically required amount for reacting with available shell-forming metal atoms.

19. (Previously Presented) A fluid or solid medium containing the nanoparticles according to claim 1.

20. (Previously Presented) A fluid medium according to claim 19 selected from an organic or aqueous dispersion medium, a coating composition, ink, dye, polymer composition, or aerosol.

21. (Previously Presented) A solid medium according to claim 19 selected from a coating, ink, dye, or polymer composition.

22. (Cancelled)

23. (Previously Presented) The process according to claim 18, wherein the anion source is phosphate, sulfate or fluoride.

24. (Previously Presented) The fluid or solid medium according to claim 19, wherein the solid medium is a polymer composition.

25. (Previously Presented) The fluid or solid medium according to claim 24, wherein the polymer composition is a polymer film.

26. (Previously Presented) The process according to claim 11, wherein said luminescent metal sulfate, phosphate, or fluoride nanoparticle cores are doped.